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ABSTRACT

This document is a guide to aid teachers in incorporating the use of calculators in the high school Accounting Curriculum. The guide contains four learning modules. Each module consists of an introductory explanation, student performance objectives, content of the module, and teaching suggestions for using calculators in each application of course content. The four modules cover the following topics: bookkeeping/accounting cycle for a service business; bookkeeping/accounting cycle for a merchandising business; multi-bookkeeper system; and simulation of a bookkeeping/accounting system for merchandising business. Methods of evaluation and a time frame for using this material are included. A chart of flowcharting symbols, flowcharting methods for solving problems on calculators, a list of audiovisual aids, and a bibliography are also contained in the guide. (KC)

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INCORPORATING CALCULATORS INTO THE ACCOUNTING CURRICULUM

ACCOUNTING I

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* August 1978

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INTRODUCTION

Curriculum changes contained in the following course of study will incorporate mini-display calculators and small printing calculators into the Accounting program, enabling students to eliminate laborious calculations, gain greater accuracy, and provide time for concentrating on more important phases of the course.

A New York State study of business organizations on "Machines that Entry-Level Employees Should be Able to Operate" indicates that 76.4 required use of electronic calculators. The students, therefore, will be able to compete with salable skills in the marketplace.

It is essential that Accounting instruction be made more compatible with the way work is done in modern offices. Curriculum modules using calculators that represent the realistic activities engaged in by entry-level bookkeeping employees have been developed.

Labor statistics* projecting job opportunities through 1985 show an increase in all job categories relating to accounting instruction. For example:

Occupation	Employment (1974)	Estimated Change by 1985
Accountants	810,000	+185,000
Bank, Finance Managers	478,000	+227,000
Bookkeepers	1,690,000	+185,000
Bank Tellers	337,000	+112,000
Billing Clerks	246,000	+ 68,000

*U.S. News & World Report, December 27,1976/January 3, 1977

MODULE I

BOOKKEEPING/ACCOUNTING CYCLE FOR A SERVICE BUSINESS

Module I concentrates on the keeping of orderly records of the financial activities of a service business. New terminology is explained clearly and started as a firm base on which a student can build a sizable, working on-the-job accounting vocabulary. The importance of accounting in the lives of everyone is stressed.

The procedures necessary to starting an accounting system are introduced and the student will learn how to handle a checkbook, make bank deposits, draw and endorse checks, and reconcile a checkbook balance with a bank statement. Procedures for operating a petty cash system are introduced.

Such basic accounting concepts as journalizing business transactions and maintaining a general ledger are emphasized. The bookkeeping/accounting tasks performed at the end of a fiscal period will be presented to the students on an acquaintanceship level.

MODULE I

Student Performance Objectives

At the conclusion of Module I the student should be able to:

1. Have the knowledge to use the electronic calculators proficiently, applying a touch operation, using flowcharting methods.
2. Provide reasons why it is desirable for any business to maintain accurate records of daily activities
3. Describe ways that a study of Accounting can be of value to the individual
4. Identify asset, liability and equity accounts

5. Show the effect upon the fundamental accounting equation of basic bookkeeping transactions relating to a service business
6. Make the appropriate entries in a General Journal and post to the ledger accounts of a service business
7. Prepare a trial balance of asset, liability and equity accounts
8. Give reasons why a trial balance may not be in balance
9. Give the main purpose and the primary use of an Income Statement
10. Give the main purpose and primary use of the Balance Sheet
11. Explain the purpose of closing the ledger at the end of a fiscal period
12. Write a check and check stub correctly
13. Endorse a check for transfer and also for deposit
14. Explain how to void a check and also how to stop payment on a check
15. Reconcile a bank statement with a checking account
16. Establish, make disbursements from, and replenish a petty cash fund
17. Identify, explain and use new terminology relating to accounting in the beginning phases

Content	Teaching Suggestions
A. Introduction	
1. Why maintain orderly and accurate financial records.	
a. Essential in good business management	

Content	Teaching Suggestions
b. To meet some legal requirements	
c. Efficient personal planning	
2. Meaning and purpose of bookkeeping and accounting	Define any and all key words used in the module that relate specifically to accounting procedures-other terminology if the need arises.
3. Importance to the student	
a. Gaining an understanding of sound business procedures and management	Bring in from local and area newspapers want ads for accountants, bookkeepers, and accounting clerks.
b. Surveying possible carreers in bookkeeping/ accounting	Supply career information on bookkeeping/accounting careers
c. Learning skills that are important additional knowledges and skills for other office job titles	Show the relationship between accounting and taxes-both income and sales.
d. Personal use records or perhaps making use of knowledge for managing or starting own business	Use latest available labor statistics to show students the favorable future employment picture.
e. Accounting as a continuing means of employment	
4. Methods of Accounting	
a. Manual Bookkeeping	Demonstrate procedures done manually, with mechanical bookkeeping equipment and on automated data processing equipment, if possible. Otherwise, explain the various methods.
b. Mechanical	
c. Automated data processing (ADP)	
B. The Balance Sheet	
1. Definition of Assets	
2. Definition of Liabilities	
3. Definition of Owner's Equity	

Content	Teaching Suggestions
4. Basic Accounting Equation	
a. Assets=Liabilities + Capital (equity of the owner)	
b. Drills for using the accounting equation	Use the "T" account form on chalkboard for explanation.
C. Journal entries	
1. Different kinds of journals	
D. Ledger-group of accounts	
1. Standard form of ledger account	
2. Recording debit and credit entries in the account	
3. Analyzing business transactions	Refer to Appendices A and B for flowcharting procedures in introducing electronic calculator mathematical processes.
4. Recording changes in assets liabilities and equity	
E. Introduce the Calculators - display and printing types	Calculators should be easily accessible in the accounting room. Basic arithmetic operations and technical operations of a specific model must be taught before use in the daily work. Explain how calculators will be used and advantages.
1. Correct positioning of calculator on desk.	
2. Correct sitting position of operator.	
3. Correct fingering positions for touch operation.	To make use of calculators to maximum advantage, emphasize touch operational techniques.
4, Correct technique for striking keys	
5. Error correction procedure	Give several problems of addition, subtraction, and multiplication for practice in learning correct operation of calculator and to be able to operate with proficiency and accuracy.
6. Clearing procedure	
7. Addition, subtraction and multiplication procedure	Limit operation at this time to 3 basic arithmetic function
8. Recording answers off viewing calculators	
9. Saving printing tapes from printing calculators.	Limit flowcharting procedures at this point to adding, subtracting and multiplying.

Content	Teaching Suggestions
F. Other Equity Accounts	
1. Meaning and recording of revenue and expenses	The term "Revenue" should replace "Income" - except in "Net Income".
2. Meaning of net income and net loss	
3. The owner's drawing account	
G. The Trial Balance	
1. Locate and correct errors revealed by a Trial Balance	Make up several types of errors.
2. Locate errors not revealed by Trial Balance.	Use the calculators for verifying and adding the Trial Balance.
H. Financial Statements	
1. The Work Sheet	Use the calculator to add and subtract the work sheet, income statement, and the balance sheet.
2. The Income Statement	
3. The Balance Sheet	
I. The closing process of the Accounting Cycle	Use the calculator to add the post-closing trial balance.
1. Close the ledger accounts into Revenue and Expense Summary	
2. Close the Revenue and Expense Summary into Capital	
3. Post-closing Trial Balance	
4. Accounting cycle flow chart	
J. General Journal	
1. Entries in a 2-column Journal	Show the 4-column General Journal.
2. Post to the general ledger using posting references	

Content	Teaching Suggestions
K. Banking procedures	Use the calculator to add bank deposits, and add and subtract in bank reconciliation procedures.
1. Making deposits	
2. Writing checks	Use the blank, full and restrictive endorsements only.
3. Stopping payment	
4. Endorsing checks	Show checks and deposit slips from banks.
5. Reconciling the bank balance	
L. Petty Cash Systems	Obtain actual petty cash vouchers.
1. Need and Purpose	Use the calculators to add and subtract petty cash receipts.
2. The petty cash box and vouchers	
3. Establish and replenish the fund	
4. Proof of petty cash	

BOOKKEEPING AND ACCOUNTING I

MODULE II

BOOKKEEPING/ACCOUNTING CYCLE FOR A MERCHANDISING BUSINESS

Module II concentrates on the bookkeeping/accounting records commonly associated with a merchandising business. Multi-columnar cash receipts journals, cash payments journals, four-column general journals and purchases and sales journals will be introduced at this point to the student. Other areas covered in this module are the accounts receivable ledger, accounts payable ledger and their control accounts. Sales returns and allowances and purchase returns and allowances will be covered.

Accounting activities occurring during the fiscal period such as the recording of daily transactions in the special journals and the posting of these transactions to the general ledger, accounts receivable ledger and accounts payable ledger will be emphasized. Source documents should be used if possible.

After completion of the work in this Module, the student will achieve proficiency in the typical bookkeeper's duties in a merchandising business.

Module II

Student Performance Objectives

At the conclusion of this Module the student should be able to:

1. Explain the principal characteristic that distinguishes a merchandising business from a service business
2. Record entries from source documents in a Purchases, Sales, Cash Receipts, Cash Payments and General Journal.
3. Post individual items from the journals to the General, Accounts Receivable and Accounts Payable Ledgers.

4. Total and rule the journals that need to be summarized and post totals to the appropriate General Ledger accounts.
5. Prepare a schedule of Accounts Receivable and Accounts Payable and reconcile the totals with the appropriate controlling accounts
6. Explain the use of the Merchandise Inventory account and its relationship to the Purchases account and perpetual inventory record
7. Explain the need for a physical inventory
8. Find the gross profit on sales
9. Use a worksheet to determine the net income or net loss for a fiscal period
10. Prepare an Income Statement and Balance Sheet
11. Record adjusting entries for merchandise, supplies, and prepaid expenses in the General Journal and post to the General Ledger
12. Flowchart the accounting cycle for a merchandise business
13. Prepare the 1040-A short form Federal Income Tax return
14. Prepare the IT-200 short form State Income Tax return
15. Increase proficiency in the use of electronic calculators by making extensive calculations in the journals, ledgers and other financial statements
16. Calculate percentages on the electronic calculators

Content	Teaching Suggestions
A. Explain the Merchandising business compared to a service business	
B. Purchase Transactions	
1. Entry for cash purchase of merchandise	Use calculators to add Purchase journal
2. Contrast with the entry for purchase of merchandise on account	
3. Source documents needed	
C. Purchases Journal	
1. Entries - Type	
2. Posting	
3. The Summary Entry	
D. Accounts Payable Control	
1. A/P Subsidiary Ledger	Use of calculator to add and subtract accounts in the subsidiary ledger.
2. Daily and end-of-month posting	
3. New 3-column ledger account	Use of calculator to add the schedule of A/P
4. Schedule of A/P	
E. Cash Payments Journal	
1. Entries - Type	Use of calculator to add C/P Journal
2. Posting	
3. The Summary Entry	
F. Solo Transactions	
1. Cash sales entries	
2. Sale of credit entries	
3. Source documents	

Content	Teaching Suggestions
G. Sales Journal	
1. Entries - Type	Use of calculator to add Sales Journal.
2. Posting	
3. The Summary Entry	
H. Accounts Receivable Control	
1. A/R Subsidiary Ledger	Use of calculator to add schedule.
2. Daily and end-of-month posting	
3. Schedule of A/R	
I. Cash Receipts Journal	
1. Entries - Type	Use of calculator to add A/R Journal.
2. Posting	
3. The Summary Entry	
J. Statement of Account	
1. Relationship to A/R ledger	Use of calculator to add and subtract.
2. Preparation and Purpose	
K. General Journal	
1. Entries that relate to sales and purchases	Show samples of credit memos.
2. Other General Journal entries	
L. Cash Discounts	
1. Terms and Purpose	Use of calculator to take %, and add and subtract the discounts.
2. Sales Discount	
3. Purchases Discount	

Content	Teaching Suggestions
M. Sales Taxes	Use of calculator to take % and add the taxes.
1. Entries to record charge and cash sales	
N. Merchandise Inventory Account	
1. Relation to Income Statement	
O. Trial Balance and Financial Statements	Use of calculator to add and subtract in determining a trial balance and preparing financial statements.
1. Trial Balance	
2. Work sheet	
3. Income Statement	
4. Balance Sheet	
P. The closing process of the Accounting Cycle	Use of calculator to add Post-Closing Trial Balance.
1. Close the ledger accounts into Revenue and Expense Summary	
2. Close the Revenue and Expense Summary into Capital	
3. Post-closing Trial Balance	
4. Accounting Cycle flow chart	
Q. Automated Systems	
1. Flow chart	
2. Computer application to Accounting	
R. Income Tax	Obtain blown-up 1040A forms from Internal Revenue Department plus many 1040A forms for student practice and instruction manuals.
1. Federal 1040A	
a. Why Income Tax in America	
b. Historical background	

Content	Teaching Suggestions
c. Taxes collected and where they're spent d. Sample problems	Use calculators to add, subtract and verify information required on tax forms. Percentage is also calculated for tax forms.
2. State Tax IT-200	
a. Sample problems	Obtain State Income Tax forms IT 200 from local State Income Tax Bureau, banks or local post offices. Use calculators to provide accurate calculations.

BOOKKEEPING AND ACCOUNTING I

MODULE III

MULTI-BOOKKEEPER SYSTEM

The student is introduced in Module III to a bookkeeping/accounting system where more than one bookkeeper is employed to handle certain of the subsystems. Four subsystems will be covered encompassing the bookkeeping/accounting tasks usually associated with these job titles: office cashier, payroll clerk, accounts receivable clerk, accounts payable clerk. After studying these subsystems in detail, the student will be able to handle the duties of one or more of the subsystems and understand its relationship to the total bookkeeping/accounting system.

If possible, the student will do a simulation of a service business in which journalizing, posting and taking a trial balance will be completed.

Module III

Student Performance Objectives

At the conclusion of this module the student should be able to:

1. Calculate regular and overtime hours
2. Compute the gross earnings of employees
3. Determine the Federal and State Income Tax deductions and FICA Tax deductions using tax tables.
4. Prepare a payroll register and paychecks with stubs showing deductions

5. Complete an employee earnings statement
6. Compute the amount of cash discount from a series of sales transactions
7. Journalize in a Cash Receipts Journal cash transactions involving cash discount and sales taxes and post to both ledgers
8. Endorse checks for deposit and prepare a bank deposit slip
9. Determine the amount due on purchase invoices when a cash discount is allowed and journalize in a Cash Payments Journal and post to both ledgers
10. Understand the duties of an office cashier, payroll clerk, accounts receivable and accounts payable clerk
11. Use calculator for multiplication, subtraction, and decimals
12. Complete a simulation for a service business

Content	Teaching Suggestions
A. The Payroll Clerk	Show want adds for payroll jobs.
1. Employee time cards	
2. Find Gross Earnings	Use of calculator to multiply add, subtract and place decimals.
3. Find Net Earnings Deductions because of Taxes	Obtain current tax tables and forms from the Regional office of the Internal Revenue Service.
4. Payroll Register	
5. Payroll tax forms	Explain W-UE to students who have jobs and why it is to their advantage to sign it.
6. Entries for payment of payroll and posting to ledger accounts	

Content	Teaching Suggestions
B. Office Cashier	Show want ads for jobs as office cashier.
1. Use of cash receipts journal	
2. Use of General Journal	Use of calculator to add and verify sales receipts.
3. Posting to ledger	
4. Preparing bank deposits	
5. Use of cash payments journal	
6. Writing checks	
7. Bank Reconciliation	Use of calculator to reconcile the bank statement and to add and subtract in petty cash.
8. Petty Cash	
C. Accounts Receivable Clerk	Show want ads for jobs as A/R clerk.
1. Use of sales journal	
2. Use of general journal	Use of calculator to add the journals and to find % of discounts and subtract.
3. Posting to the ledgers	
4. Schedule of A/R	Show cash register tape.
5. Statements of Account	
D. Accounts Payable Clerk	Show want ads for jobs as A/P clerk.
1. Use of Purchases Journal	
2. Use of General Journal	Use of calculator to add the journals and find % of discount and subtract.
3. Posting to the ledgers	
4. Schedule of A/P	
5. Statements of Account	
E. Service Business Simulation	Small group work with teacher working as consultant to each group is effective with a simulation. Extensive use of calculators for adding and subtraction in simulation.
1. Journals	
2. Ledgers	
3. Trial Balance	

MODULE IV

SIMULATION OF A BOOKKEEPING/ACCOUNTING SYSTEM FOR A MERCHANDISING BUSINESS

In Module IV the student will experience a simulation that will insofar as possible parallel the kind of work required by a full-time bookkeeper.

The simulation covers the activities of a typical merchandising business. The student will journalize, post to the ledgers, complete a worksheet to determine net profit/loss, prepare financial statements and do adjusting and closing entries.

Module IV

Student Performance Objectives

At the conclusion of this module the student should be able to:

1. Record business transactions in the following journals:
   a. Purchases Journal
   b. Sales Journal
   c. Cash Receipts Journal
   d. Cash Payments Journal
   e. General Journal
2. Post all entries to the proper ledger accounts
3. Prepare a Schedule of Accounts Receivable and Accounts Payable
4. Prepare a worksheet, Balance Sheet, Income Statement
5. Prepare the adjusting and closing entries and post to the General Ledger

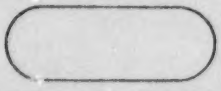
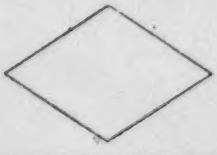
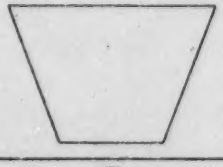
6. Close and rule the ledger accounts
7. Prepare a Post-closing Trial Balance
8. Simulate on-the-job performance, having used calculators to add, subtract, multiply, do percentages and verify accuracy of all work.

Content	Teaching Suggestions
A. Use of 5 Journals	Use of calculators to add and multiply.
B. Post to General Ledger and Subsidiary Ledger	
C. Prepare a Schedule of A/R and A/P	Use of calculators to add.
D. Preparation of financial statements	Use of calculators to add and subtract.
E. Journalize adjusting and closing entries and post to General Ledger	
F. Close the ledger accounts	
G. Prepare a post-closing Trial Balance	Use of calculator to add.

METHODS OF EVALUATION AND TIME FRAME

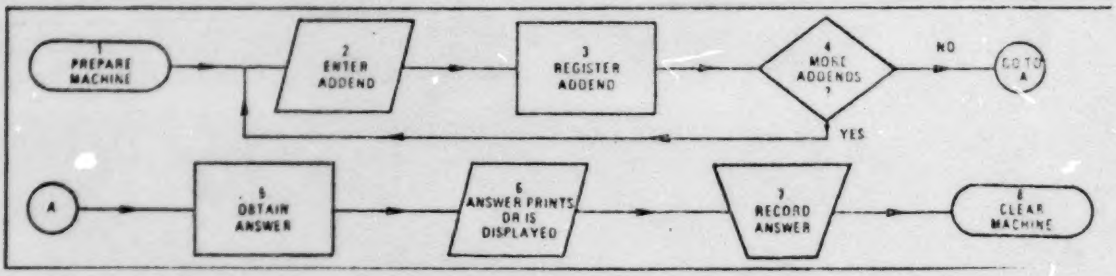
		Weeks
Module I	Unit Test covering terminology and trial balance	1-10
	Unit test covering financial statements	
	Unit test covering bank reconciliations	
Module II	Unit test on journalizing in all 5 journals	11-20
	Unit test on adjusting entries	
	Unit test on work sheet	
	Mid-term examination	
Module III	Unit test on payroll and office cashier's duties	21-30
	Unit test on accounts receivable clerks' and accounts payable clerks' duties	
	Practice Set for Service Business	
	Test on Practice Set	
Module IV	Unit test on posting to all ledgers	31-40
	Practice Set for Merchandising business	
	Test on Practice Set	
	Final Examination	

Standard FLOWCHARTING Symbols

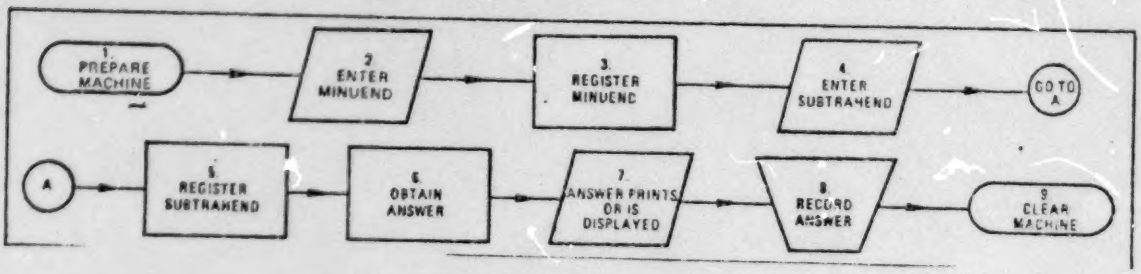
SYMBOL	SYMBOL NAME	REPRESENTS
	**Terminal**	The beginning or the end of a problem.
	Input/ Output	The making of information available to the machine for processing. For example, entering a number into the machine for processing (input); or, the printing of an answer by the machine (output).
	Process	The processing of information by the machine which eventually results in the solution of the problem.
	**Decision**	A point at which a choice must be made. For example, deciding whether or not additional addends must be entered in order to solve a problem.
	**Manual Operation**	A procedure that must be performed by the operator independently of the machine. For example, recording the answer to a problem in the proper blank.
	Connector	An exit from or an entry into another part of the problem.
	Flowline	The direction of sequence of operations leading to the solution of a problem.

ELECTRONIC CALCULATORS

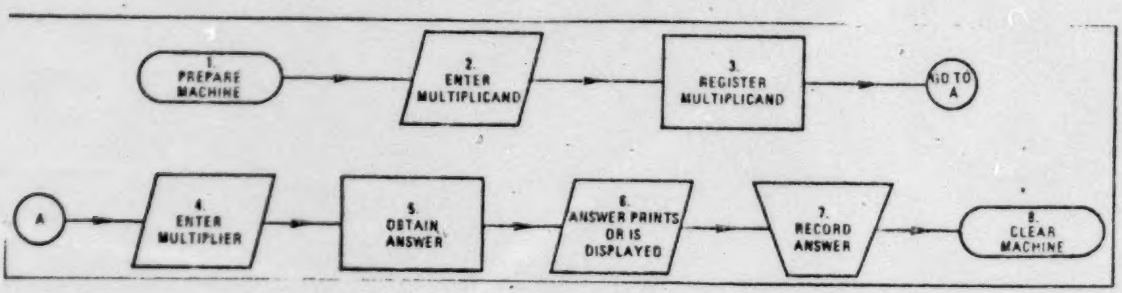
FLOWCHARTING TOUCH ADDITION



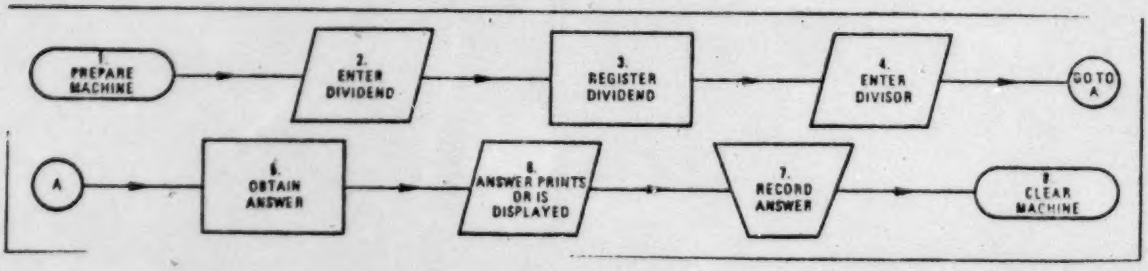
FLOWCHARTING SUBTRACTION AND CORRECTION OF ERRORS



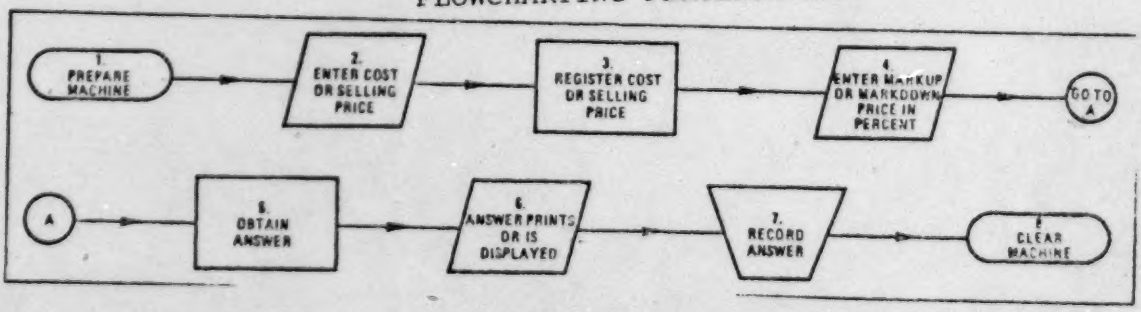
FLOWCHARTING MULTIPLICATION

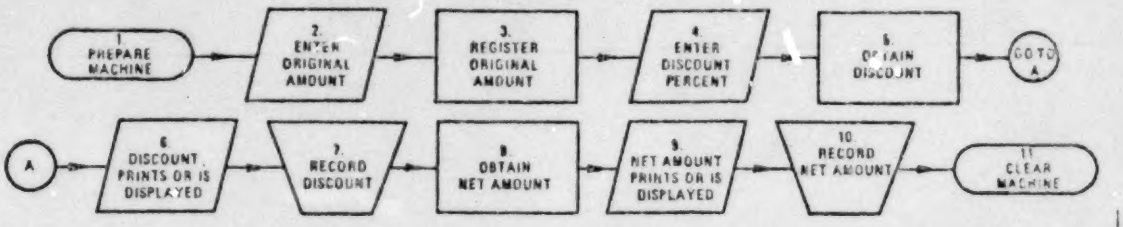


FLOWCHARTING DIVISION



FLOWCHARTING PERCENTAGES


1 PREPARE MACHINE
2 ENTER COST OR SELLING PRICE
3 REGISTER COST OR SELLING PRICE
4 ENTER MARKUP OR MARKDOWN PRICE IN PERCENT
GO TO A
A
5 OBTAIN ANSWER
6 ANSWER PRINTS OR IS DISPLAYED
7 RECORD ANSWER
8 CLEAR MACHINE



Solving problems by the step-by-step flowcharting method reduces chances of error, makes problems easier to understand, and makes best use of time.

Students should be encouraged to follow the flowcharting procedures, first reading the step-by-step instructions carefully and applying the procedure to several appropriate problems to gain proficiency.

Visual Aids

1. Set of six Accounting Wall Charts--Cram Co., Inc.
   Indianapolis, Indiana

2. Overhead projector and accounting transparencies

3. Suggested filmstrips: Source: Gregg/McGraw Hill Co.
   1221 Avenue of the Americas
   New York, N.Y. 10020

   a. Bookkeeping Equation and the Balance Sheet
   b. Use of Accounts and Analysis of Transactions
   c. Journalizing and Posting
   d. Preparing a Trial Balance
   e. Preparation of the Worksheet and Financial Statements
   f. Closing Entries
   g. The Journal
   h. Posting
   i. How to Balance Accounts
   j. Controlling Accounts

4. Pamphlets: Source: American Institute of Certified Public Accountants
   1211 Avenue of the Americas
   New York, N.Y. 10036
   (212) 575-6200

   a. What does a CPA do?
   b. "A career as a Certified Public Accountant
   c. Accounting for Your Future

5. Federal Income Tax Kit Source: Dept. of the Treasury
   Internal Revenue Service

6. State Income Tax Forms Source: Obtain IT200 State Tax forms from local State Income Tax bureau, banks, or post office

7. Office Machines Course on Electronic Calculators-M79 Source: South-Western Publishing Co
   925 Spring Road
   Pelham Manor, N.Y. 10803

8. Instructional Manuals accompanying various makes of electronic calculating equipment.

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